

d.) Remarks

All original claims have been cancelled and replaced with new claims 43-103. These new claims are fully supported by the specification as filed, and thus, claims 43-103 are now pending.

Please note that new claims 87-103 claim a three acid solution, wherein the amount of the three acids are identified in weight percent. As weight percent and volume percent are simply measurements, and interchangeable, they can be calculated by one of ordinary skill in the art.

For example, Example 1, on pages 16 and 17 of the specification, discloses how a typical solution can be made according to this invention. Therein 12N hydrochloric acid is used as the first GRAS acid; 75-80% concentrated phosphoric acid is used as the second GRAS acid and citric acid is used as the third GRAS acid.

The vol% of an acid in an aqueous solution can roughly converted into wt% by multiplying the vol% acid by the density of the acid. For example, the specification discloses that the acid composition preferably has between 0.1 vol% to 25 vol% of a first GRAS acid such as hydrochloric acid (see specification, page 8, lines 15-18). The attached table from the CRC Handbook of Chemistry and Physics indicates that 12N hydrochloric has a density of 1.0576gm/ml. As shown by the following calculation, 25vol% of 12N hydrochloric acid is equivalent to 26wt% 12N hydrochloric acid (the density of the aqueous solution is approximated as 1, the density of water).

$$\frac{25ml \cdot hydrochloric \cdot acid}{100 \cdot ml \cdot solution} \cdot \frac{1.0576m \cdot hydrochloric \cdot acid}{ml \cdot hydrochloric \cdot acid} \cdot \frac{1ml \cdot solution}{1gm \cdot solution} = \frac{26gm \cdot hydrochloric \cdot acid}{100gm \cdot solution}$$

and 0.1 vol% of 12N hydrochloric acid is equivalent to .11 wt% 12N hydrochloric acid as shown below:

$$\frac{.1ml \cdot hydrochloric \cdot acid}{100 \cdot ml \cdot solution} \cdot \frac{1.0576m \cdot hydrochloric \cdot acid}{ml \cdot hydrochloric \cdot acid} \cdot \frac{1ml \cdot solution}{1gm \cdot solution} = \frac{.11gm \cdot hydrochloric \cdot acid}{100gm \cdot solution}$$

This means that a range of 0.1- 25 vol% of hydrochloric acid is equivalent to 0.11-26wt% hydrochloric acid.

Similarly, in Example 1, 75-80% phosphoric acid is used as the second GRAS. The specification discloses that the acid composition preferably has between 0.1 vol% to 25 vol% of the second GRAS acid such as phosphoric acid (see specification, page 8, line 25). The attached table from Rhodia Specialty Phosphates indicates that 77.32% phosphoric acid (which is in the middle of the 75-80% concentrated phosphoric acid disclosed in Example 1) has a density of 1.602gm/ml. As shown by the following calculation, 25vol% of 77.32% phosphoric acid is equivalent to 40wt% 77.32% phosphoric acid:

$$\frac{25\text{ml} \cdot \text{phosphoric} \cdot \text{acid}}{100 \cdot \text{ml} \cdot \text{solution}} \cdot \frac{1.602\text{gm} \cdot \text{phosphoric} \cdot \text{acid}}{\text{ml} \cdot \text{phosphoric} \cdot \text{acid}} \cdot \frac{1\text{ml} \cdot \text{solution}}{1\text{gm} \cdot \text{solution}} = \frac{40\text{gm} \cdot \text{phosphoric} \cdot \text{acid}}{100\text{gm} \cdot \text{solution}}$$

and 0.1 vol% of 77.32% phosphoric acid is equivalent to .16wt% 77.32% phosphoric acid as shown below:

$$\frac{.1\text{ml} \cdot \text{phosphoric} \cdot \text{acid}}{100 \cdot \text{ml} \cdot \text{solution}} \cdot \frac{1.602\text{gm} \cdot \text{phosphoric} \cdot \text{acid}}{\text{ml} \cdot \text{phosphoric} \cdot \text{acid}} \cdot \frac{1\text{ml} \cdot \text{solution}}{1\text{gm} \cdot \text{solution}} = \frac{.16\text{gm} \cdot \text{phosphoric} \cdot \text{acid}}{100\text{gm} \cdot \text{solution}}$$

This means that a range of 0.1- 25 vol% of phosphoric acid is equivalent to 0.16-40wt% phosphoric acid. Accordingly, as is clear to those of ordinary skill, claims 87-103 are fully supported in the specification as filed.

Conclusion

The application is in condition for examination and the prompt issuance of an office action is earnestly solicited. If there are any additional fees due with the filing of this Preliminary Amendment, not otherwise accounted for herein, including any fees for an extension of time, applicant respectfully requests that extension and further requests that any and all such fees be charged to Deposit Account No. 03-1952.

Respectfully submitted,

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